

# TEAC

## SERVICE MANUAL

# A-H400

### Integrated Stereo Amplifier

#### NOTES

- PC boards shown are viewed from parts side.
- The parts with no reference number or no parts number in the exploded views are not supplied.
- As regards the resistors and capacitors, refer to the circuit diagrams contained in this manual.
- △ Parts marked with this sign are safety critical components.  
They must be replaced with identical components- refer to the appropriate parts list and ensure exact replacement.
- Parts of [ ] mark can be used only with the version designated.  
[J] : JAPAN [US] : U.S.A. [C] : CANADA  
[E] : EUROPE [UK] : U.K. [GE] : GENERAL EXPORT

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## Specifications

### AMP Section

Power output	: 40W + 40W (8Ω, 1kHz, 0.3%)
Total harmonic distortion	: 0.05% (40W, 1kHz, 8Ω)
S/N Ratio (inout Short)	
Phono	: 65dB (IHF-A)
CD, Tuner, Aux, Tape	: 90dB (IHF-A)
Input Sensitivity/ Impedance	
Phono(MM)	: 2.5mV/47KΩ
CD, Tuner, Aux, Tape	: 200mV/47KΩ
Maximun Input level	
Phono	: 45mV
CD, Tuner, Aux, Tape	: 4.5V
Channel Separation	
(Input Short)	: 56dB (1kHz, 1W, B.P.F)
Residual noise	: 0.6mV
Frequency response	: 5Hz to 85kHz
Tone control	
Bass	: ±10dB (100Hz)
Treble	: ±10dB (10KHz)
Required speaker impedance	: 8Ω to 16Ω

### General

Power Requirements	: 230V AC, 50Hz[EUR]
Power Consumption	: 100W[EUR]
Dimensions (W×H×D)	: 285×131×352mm
Weight(net)	: 6kg

### Standard accessories

Remote Control unit	: 1
Operator's manual	: 1

- Improvements may result in specifications and features changing without notice.
- Illustrations may differ slightly from production models.

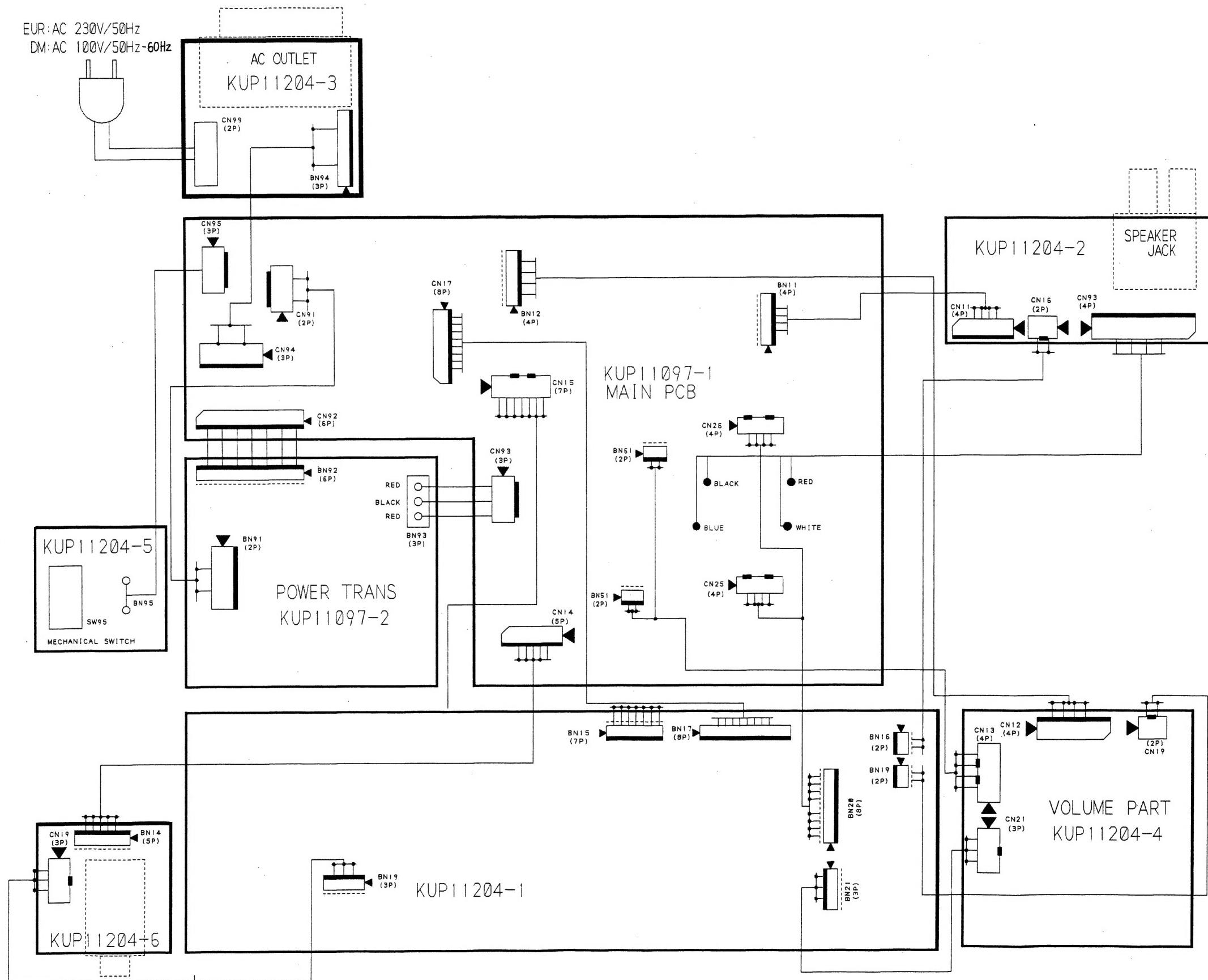
# IC FUNCTION (MI-COM BVIANAM 1243M,BVITMP78PM78F)

PIN NO.	SYMBOL	I/O	DESCRIPTION
1	Vdd	I	+5V
2	NC		No Connection
3	Func, Mute	O	Function Mute ON/OFF Output
4	NC		No Connection
5	Tuner-Nute	O	Tuner Mute Output
6	Stereo/Mono	O	Stereo/Mono Switching Output
7~9	Func, Indicator	O	Function LED Drive Data Output
10	NC		No Connection
11	RDS-DATA	I	RDS DATA Output
12	FM-L	I	FM/AM Switching Output
13	RDS-CLK	I	RDS CLOCK input
14	Stereo-IN	I	Stereo Display input
15	Tuned-IN	I	Tuned Display input
16	Protect-IN	I	Protection input
17~21	Key Input	I	Resistor Divide Key Control Input
22	Vss		GND
23	Vass		GND
24	Vref		Vdd(+5)
25	Vdd		+5V
26	Back-up	I	Backup Mode Control
27	Vss		GND
28~29	Func. Up/Down	I	Function UP/DOWN Input
30	Vss		GND
31	XIN	I	Crystal element Connection Terminal
32	XOUT	O	Crystal element Connection Terminal
33	RESET	I	RESET Input
34	Remote-In	I	Remote Control Input
35	BUS OUT	O	System Control Output
36	BUS IN	I	System Control Signal Input
37	SPK ON/OFF	O	Speaker ON/OFF Output
38	NC		No Connection
39	-20dB Mute	O	-20dB Mute Output
40	NC		No Connection
41	PLL CE	O	PLL Serial Chip Enable Output
42	PLL DATA	O	PLL Serial Data Output
43	PLL CLK	O	PLL Serial CLOCK Output
44	Option	O	Amp/Receiver Option
45	NC		No Connectio
46	STB	O	Function IC Signal Output
47	DATA	O	Function IC Signal Output
48	CLK	O	Function IC Signal Output
49	NC		No Connection
50	Vkk		FIP Voltage Output
51~61	FIP GRID	O	FIP GRID Output
62~82	FIP ANODE	O	FIP ANODE Output
83~85	Option	O	Region Option
86	Option	O	Display Option
87	RDS	O	RDS ON/OFF Option
88	Model Option	O	Model Option
89	Standby	O	Standby/Direct Option Output
90	VOL UP	O	VOL UP
91	VOL DOWN	O	VOL DOWN
92	VOL LED	O	VOL LED Display
93	Power ON/OFF	O	Power ON/OFF Output
94	Standby LED	O	Standby LED ON/OFF Ouput
95~100	NC		No Connection

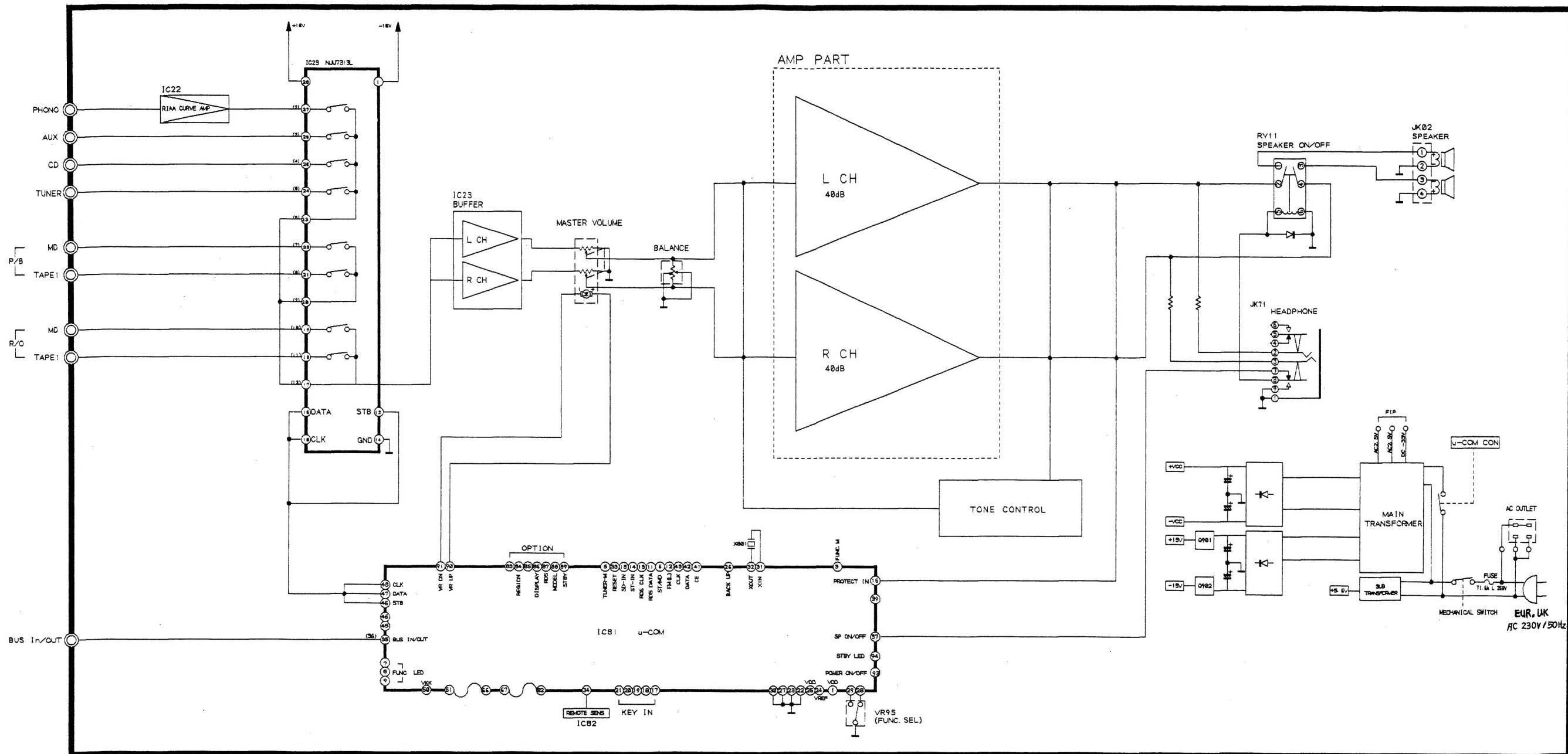
# IC BLOCK DIAGRAM

TO-92L							TO-92						
 1. Emitter 2. Collector 3. Base							 1. Emitter 2. Collector 3. Base						
KSD1021Y KSC2785Y KSR1206 KSR2206 KSA992F KSB811Y KSR1204							KTC3198Y 2SAC3200GR KTD1302 KTC31920						
TO-220							TO-220						
 1. Base 2. Collector 3. Emitter							 1. INPUT 2. GND 3. OUTPUT						
2SD1585L KSD288Y KSA614Y							MC7812C						
TO-92L							TO-3P						
 1. Emitter 2. Collector 3. Base							 1. Base 2. Collector 3. Emitter						
KSA916Y KSC2316Y KTC3227Y KSC2310Y							2SD998 2SB778						

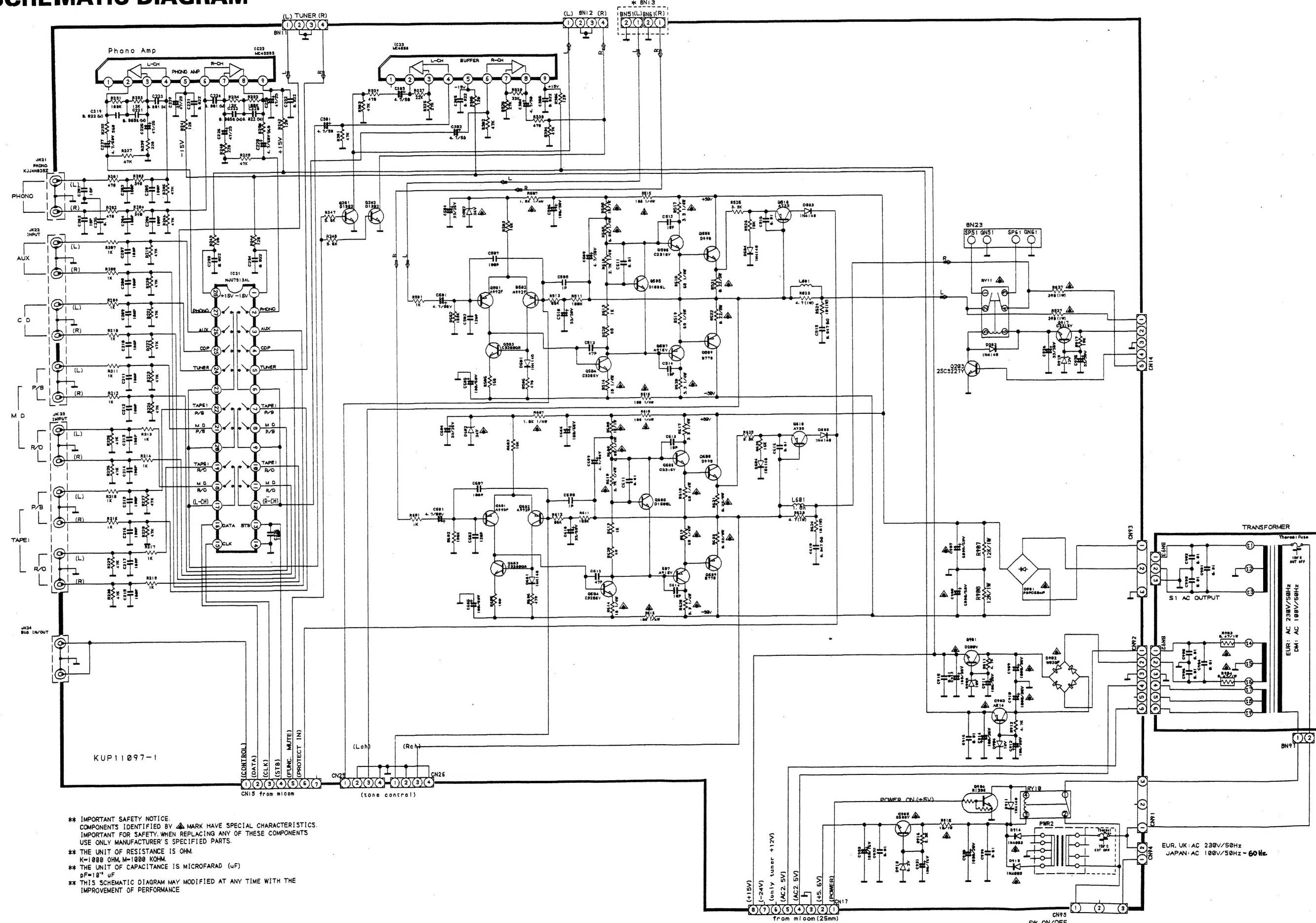
## WIRING DIAGRAM

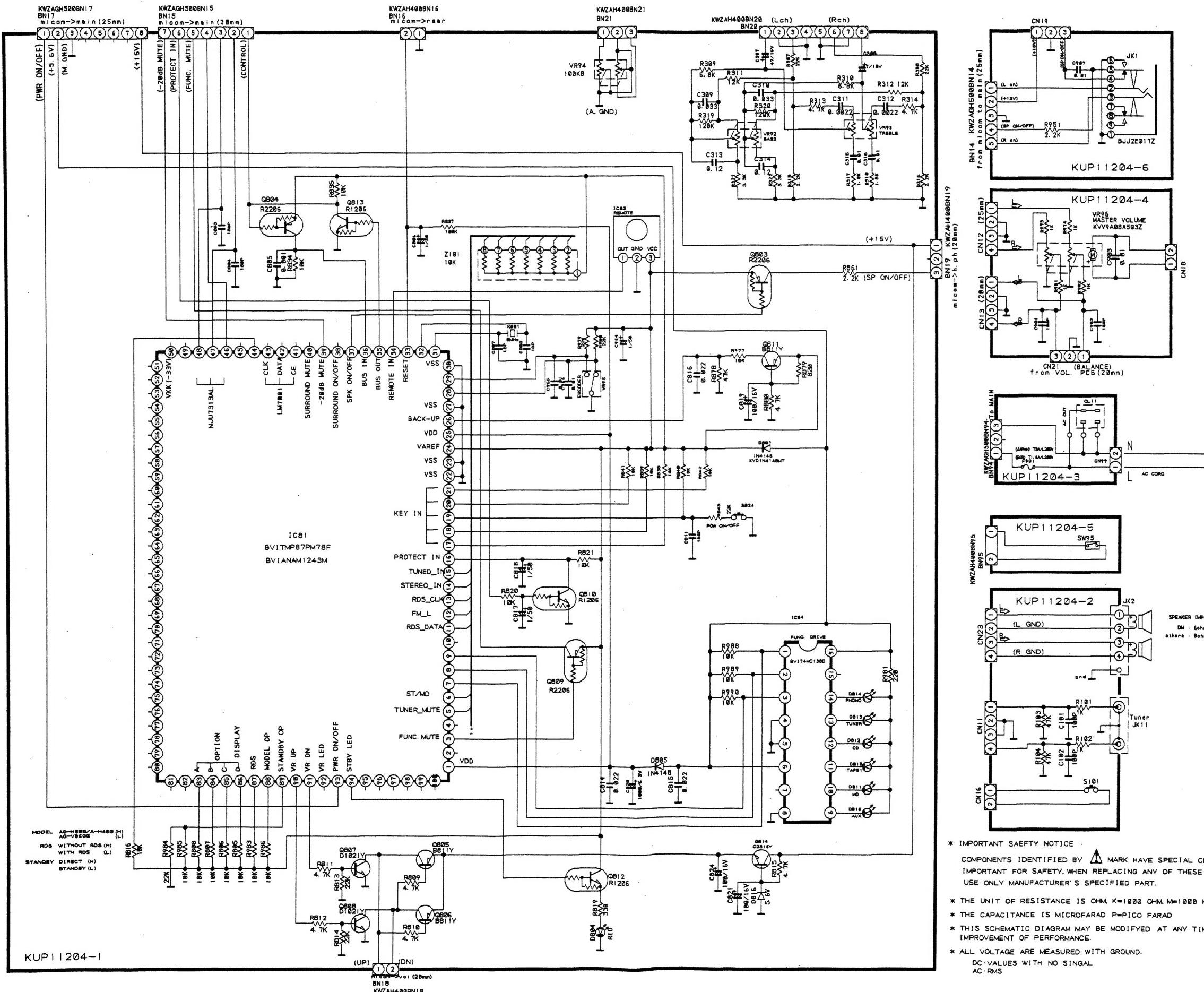


## BLOCK DIAGRAM



# SCHEMATIC DIAGRAM





\* IMPORTANT SAFETY NOTICE

COMPONENTS IDENTIFIED BY  MARK HAVE SPECIAL CHARACTERISTICS  
IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS  
USE ONLY MANUFACTURER'S SPECIFIED PART.

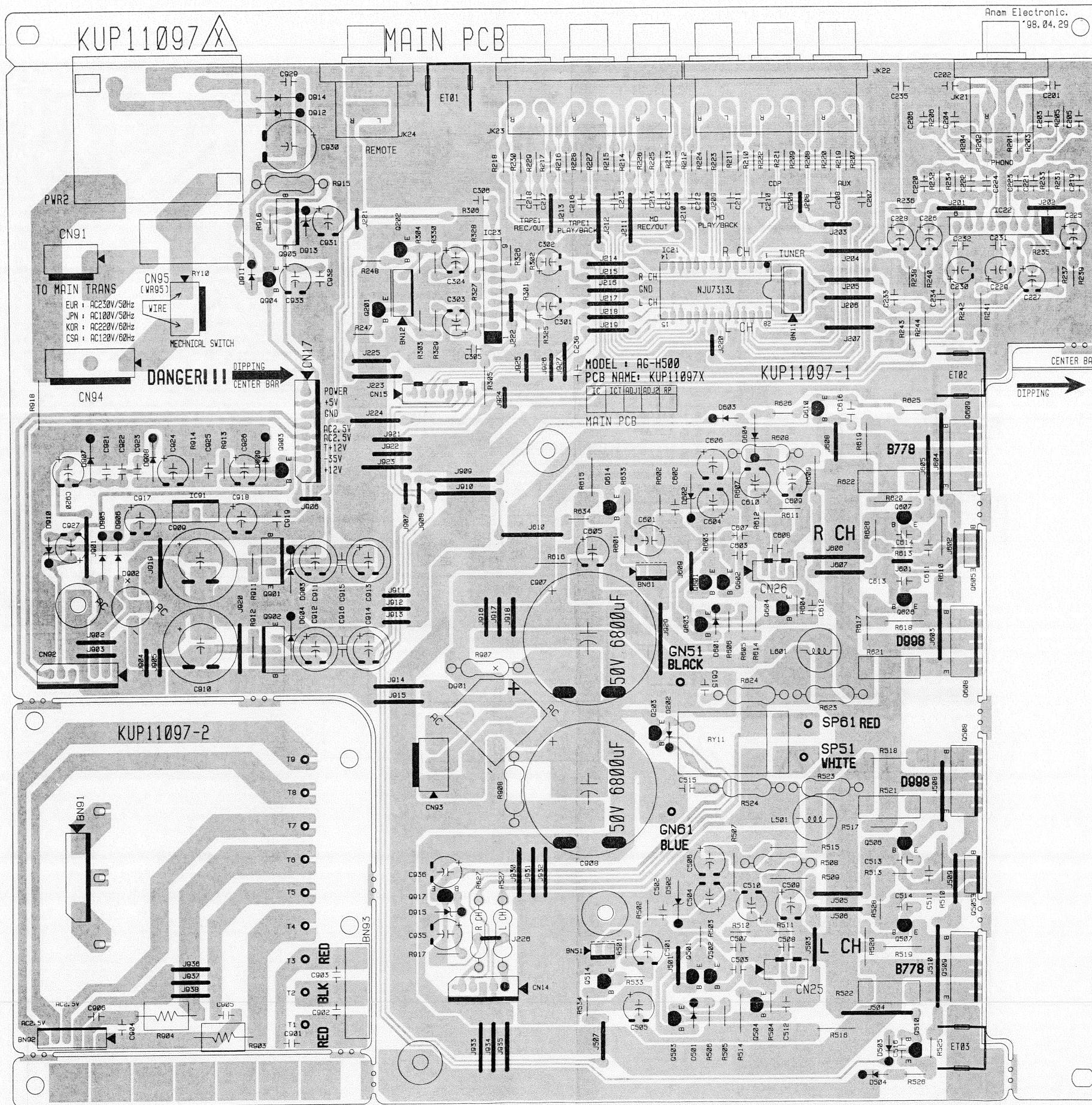
\* THE UNIT OF RESISTANCE IS OHM. K=1000 OHM, M=1000 KOHM.

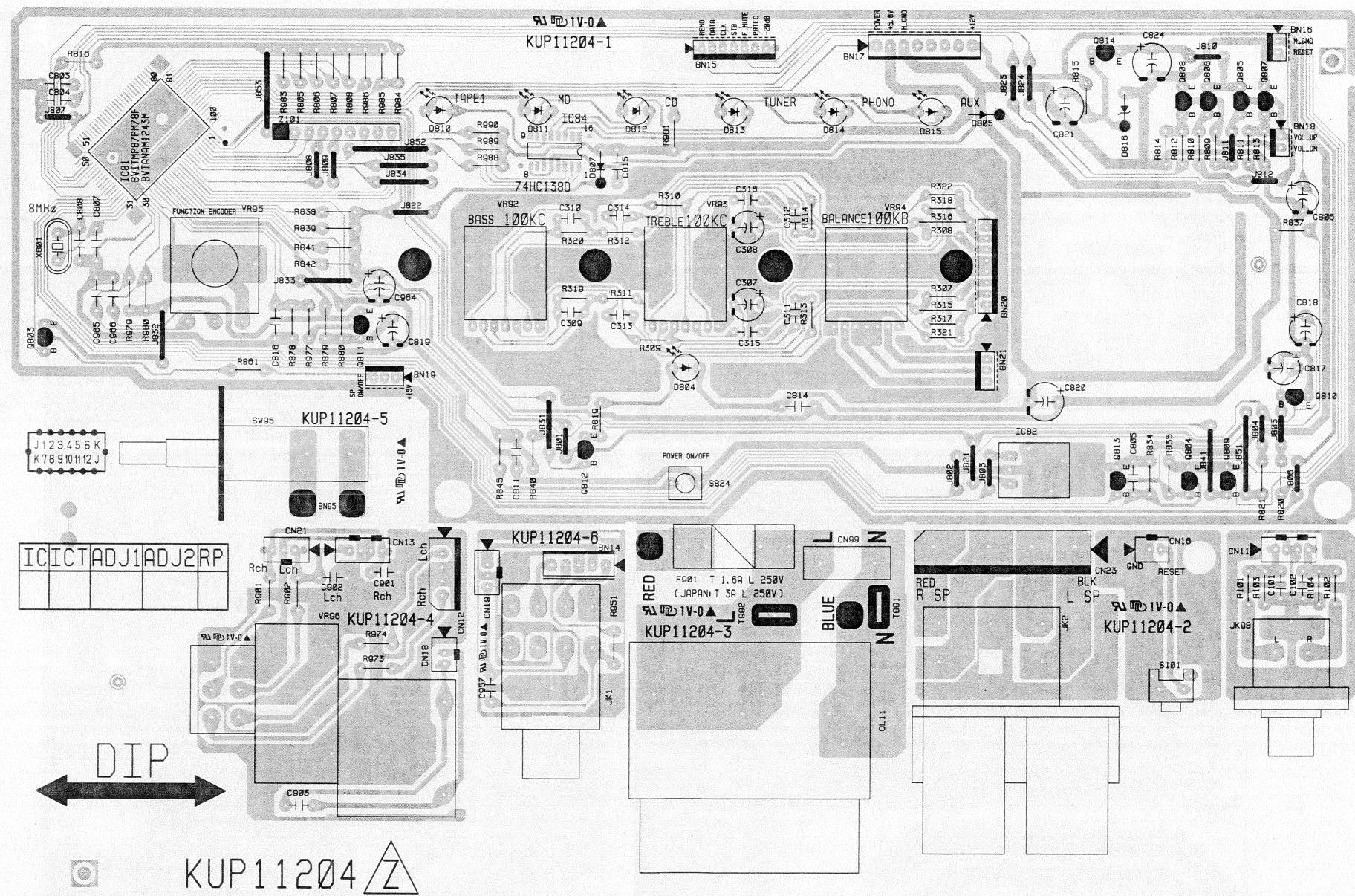
\* THE CAPACITANCE IS MICROFARAD P=PICO FARAD

\* THIS SCHEMATIC DIAGRAM MAY BE MODIFIED AT ANY TIME WITH THE IMPROVEMENT OF PERFORMANCE.

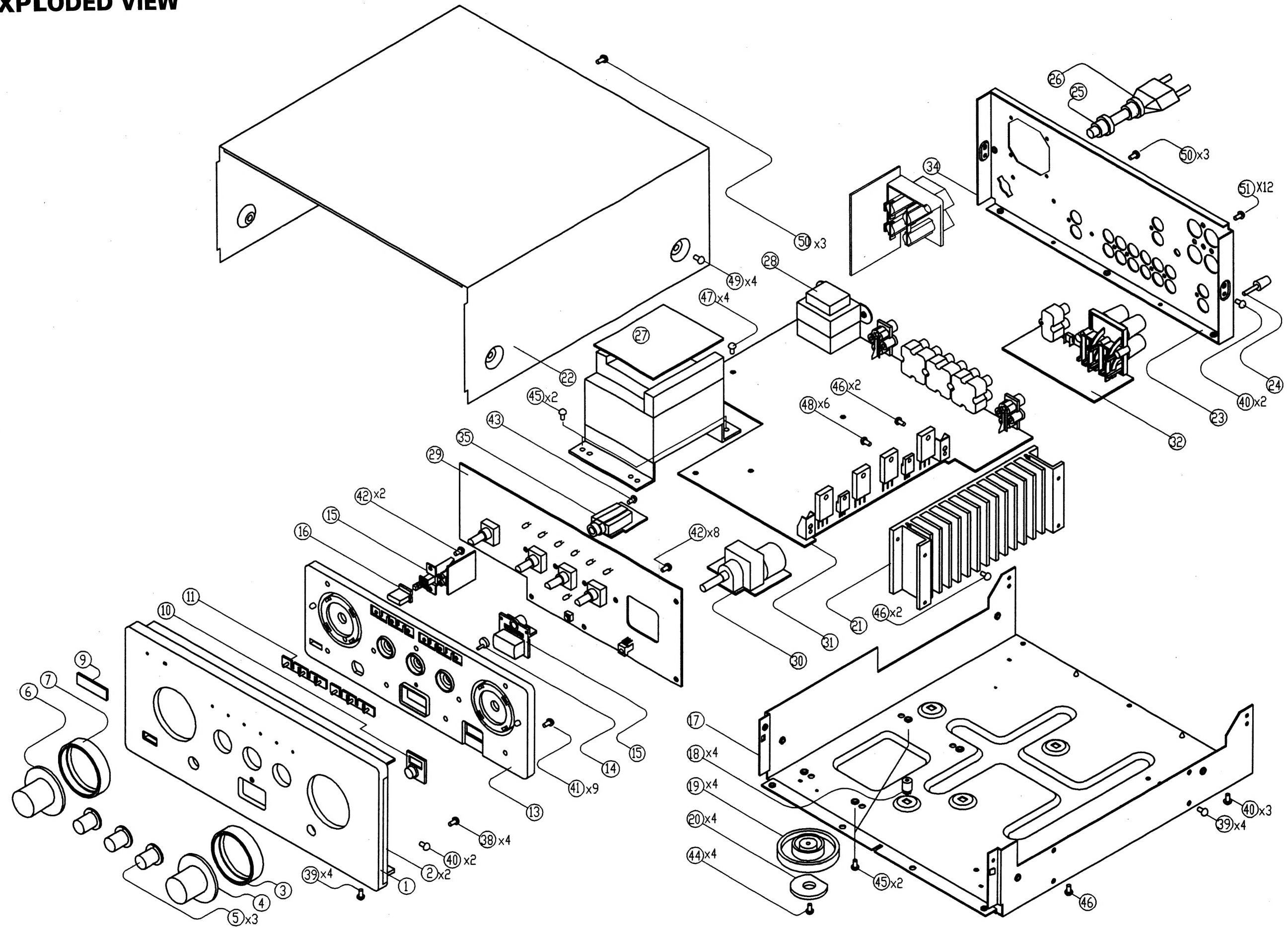
\* ALL VOLTAGE ARE MEASURED WITH GROUND.  
DC VALUES WITH NO SINGAL

# **PRINTED CIRCUIT BOARDS**





## EXPLODED VIEW



**EXPLODED VIEW**

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
1	9A07341900	PANEL , AL	KKM1A078ZC11
2	9A06677600	SIDE BAR	KKM1A062C11
3	9A06697200	HOUSING,VOLUME A4-96-2578	KGX1A240C12
4	9A06905800	VOLUME CAP ASS'Y	KGX1A238XA
5	9A06228400	VOLUME CAP ASS'Y (C)	KGX1A218ZA
6	9A06905900	VOLUME CAP ASS'Y	KGX1A238YA
7	9A06906200	HOUSING,VOLUME	KGX2A240C12
8		VACANT	
9	9A06224200	BADGE,TEAC	BGB1A047
10	9A06863500	WINDOW,SENSOR	KGU2A155
11	9A06905500	INDICATOR	KGL1A134
12	9A06904600	KNOB, TACT	KBT1A485ZK64
13	9A07341400	PANEL , MOLD	KGW1A243ZK64
14	9A07301300	INDICATOR,POWER	KGL2A120
15	9A07341200	KNOB , TACT	KBT1A599ZK64
16	9A07341100	KNOB , POWER	KBC1A113ZK64
17	9A06908600	CHASSIS , BOTTOM	KUA1A156
18	9A06229100	MOUNT , PCB A4-92-1728	KHE1A023
19	9A06315500	FOOT	KKL1A047ZK63
20	9A06229300	CUSHION , FOOT	KHG1A039Z
21	9A06907500	SINK , HEAT	KMY1A125
22	9A06678600	TOP CABINET	KKC1B082S21
23	9A07341800	PANEL , REAR	KKF5A151RK59
24	9A05917200	GROUND TERMINAL	KMA2A001
25	△ 9A01376900	BUSHING,AC CORD HEYCO(SR-	KHR129
26	△ 9A05328100	CORD,POWER	KJA2B019Z
27	△ 9A06907200	TRANS , POWER	KLT5S001ZE
28	9A06675500	TRANS SUB	KLT5J024ZE
29		FRONT PCB	
30	9A06237000	VOLUME, MOTOR RK6312MC282	KVV9A08A503Z
31	9A07342000	MAIN PCB ASS'Y	KOP11097G
32		HEADPHONE PCB	
33		VACANT	
34		OUTLET PCB	
35		HEADPHONE PCB	
36		VACANT	
37		VACANT	
38	9A06229000	SCREW , SPECIAL	KHD1A016
39	9A01397400	SCREW KTS3+8J	KTS3+8J
40	9A01532600	SCREW KTB3+6J	KTB3+6J
41	9A06234700	SCREW KTW3+6F	KTW3+6F
42	9A01377400	SCREW,KTB3+10G	KTB3+10G
43	9A01377400	SCREW,KTB3+10G	KTB3+10G
44	9A05339200	SCREW KTW3+8J	KTW3+8J
45	9A01477800	SCREW,KTB4*8F	KTB4*8F
46	9A01535800	SCREW,KTB3+8J	KTB3+8J
47	9A06679700	SCREW,KTB3+14J	KTB3+14J
48	9A01377500	SCREW,KTB3+12J	KTB3+12J
49	9A05984300	SCREW,KTB4+6FFZ	KTB4+6FFZ
50	9A01377200	SCREW KTB3+8JFZ	KTB3+8JFZ
51	9A01377300	SCREW,KTB3+10GFZ	KTB3+10GFZ
△	9A05353400	FUSE,F1.6A	KBA2C1600TLE

**INCLUDED ACCESSORIES**

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
	9A07124800	OWNER'S MANUAL E/F/G/I/S A-H400	KQX1A479Z
	9A07322200	SUPPLEMENTE (E/F/G/I/S) A-H500I	KQE1A113Z
	9A07364020	REMOCON XMTR ASS'Y (RC-711)	KARTAH500IEUR

**■ Resistor and Capacitor**

- Notes : Part numbers are indicated for most mechanical parts.  
 Please use this part number for parts order.  
**IMPORTANT SAFETY NOTICE.**  
 Components identified by △ mark have special characteristics important for safety.  
 When replacing any of these components, use only manufacturer's specified parts.  
 The unit of resistance is OHM(Ω)  
 K=1000(Ω), M=1000(KΩ)  
 The unit of capacitance is MICROFARAD(μF).  
 P=10<sup>-6</sup>μF

**■ Numbering System of Resistor**
**Example**

KRD Type	25 Wattage	F Shape	J Tolerance	101 Value
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Resistor Type	Wattage	Tolerance
KRD:Carbon	20:1/5W	F:=±1%
KRG:Metal Oxide	25:1/4W	J:=±5%
	50:1/2W	K:=±10%
	1:1W	
	2:2W	
	3:3W	

**■ Numbering System of Capacitor**
**Example**

KCKT Type	1H Voltage	101 Value	K Tolerance	B Peculiarity
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Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
KCB:Ceramic	OJ:6.3V	1H:50V DC	C:±0.25pF
KCC:Ceramic	1A:10V	1:125V DC	G:±2%
KCK:Ceramic	1C:16V	KC:400V AC	J:±5%
KCFR:Semiconductor	1E:25V		K:±10%
KCQI:Polyester	1H:50V		Z: +80%, -20%
KCQP:Polypropylene	1V:35V		
KCQS:Polystyrol			

## MAIN PCB ASS'Y

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
	9A07342000	MAIN PCB ASS'Y	KOP11097G
	9A07342500	PCB , MAIN	KUP11097X
C907.908	△ 9A06905000	CAP , ELECT	KCET50VAH682N
C909.910	△ 9A06904900	ELECT,CAP(1000UF/35V AHS)	KCEA1VAHS102E
C930	△ 9A06226700	CE, 1000UF H 25V DC	KCEA1EH102E
D202.501	9A01390500	DIODE,1N4148MT	KVD1N4148MT
D502.602	△ 9A06256300	DIODE , ZENER UZ24BMT	KVDUZ24BMT
D503.504	9A01390500	DIODE,1N4148MT	KVD1N4148MT
D601.603	9A01390500	DIODE,1N4148MT	KVD1N4148MT
D604	9A01390600	DIODE,1N4148T	KVD1N4148T
D901	△ 9A05353100	DIODE , BRIDGE PBPC604F	BVDPBPC604F
D902	△ 9A05987000	DIODE,BRIDGE W02GF	BVDW02GF
D903.904	△ 9A05970800	DIODE,UZ16BMT	KVDUZ16BMT
D911	9A01390500	DIODE,1N4148MT	KVD1N4148MT
D912.914	9A05194700	DIODE,1N4003ST	KVD1N4003ST
D913	△ 9A06236200	DIODE,ZENER MTZJ6.2BT	KVDMTZJ6.2BT
D915	△ 9A05359600	DIODE,ZENER MTZJ12BT	KVDMTZJ12BT
IC21	9A06716700	IC, NJU7313L	BVINJU7313L
IC22.23	9A05195800	IC,MC4558S	KVIMC4558S
JK21	9A06906500	JACK , INPUT	KJJ4N028Z
JK22.23	9A06674900	JACK,BOARD 4R014Z	KJJ4R014Z
JK24	9A06906600	JACK , REMOTER	KJJ4N030Z
L501.601	9A04875100	COIL,	KLEYK1R8KA
PW2	△ 9A06675500	TRANS SUB	KLT5J024ZE
Q201.202	9A05197500	TR,KTD1302T	KVTKTD1302T
Q203	9A05196900	TR,KSR1206TA	KVTKSR1206T
Q203	9A05939600	TR,KTC3227Y	KVTKTC3227YT
Q501.502	9A05341600	TR,KSA992-FTA	KVTKSA992FT
Q503.603	9A06236700	TR,KTC3200GRT	KVTKTC3200GRT
Q504.604	9A07363800	TR,KSC2310YT	KVTKSC2310YT
Q505.605	9A05977200	TR.,2SD1585	BVT2SD1585L
Q506.606	9A05196800	TR,KSC2316-Y-SHTA	KVTKSC2316YT
Q507.607	9A05196700	TR,KSA916-Y-SHTA	KVTKSA916YT
Q508.608	9A05359800	TR, KTD9980	KVTKTD9980
Q509.609	9A05359700	TR, KTB7780	KVTKTB7780
Q510.610	9A01387400	TR,KSA733CYT	KVTKSA733CYT
Q601.602	9A05341600	TR,KSA992-FTA	KVTKSA992FT
Q901.905	△ 9A01388300	TR,KSD288-Y-AB	KVTKSD288Y
Q902	△ 9A01388400	TR,KSA614-Y	KVTKSA614Y
Q904	9A05196900	TR,KSR1206TA	KVTKSR1206T
Q917	9A05196800	TR,KSC2316-Y-SHTA	KVTKSC2316YT
R508.608	△ 9A06908200	RES , METAL OXIDE FILM	KRG1ANJ102H
R521.522	△ 9A05896300	R.,0.22-OHM,5W	KRF5EKR22H
R523.623	△ 9A05896400	R.,4.7-OHM,1W	KRG1ANJ4R7H
R524.624	△ 9A05338000	R,METAL OXIDE FILM 1W 10	KRG1ANJ100H
R527.627	△ 9A05338200	R,METAL OXIDE FILM 1W 390	KRG1ANJ391H
R621.622	△ 9A05896300	R.,0.22-OHM,5W	KRF5EKR22H
R903.904	△ 9A05897200	RES,FUSE 0.47-OHM,1W	KRQ1CJR47
R907.908	△ 9A06908300	RES , METAL OXIDE FILM	KRG1ANJ123H
R915	△ 9A05338000	R,METAL OXIDE FILM 1W 10	KRG1ANJ100H
RY10	△ 9A05987100	RELAY HR-CR7-DC12V	KSL1A007ZE
RY11	△ 9A04879000	RELAY,OSA-SS-212DM3	BSL4A004ZU

## SUB PCB ASS'Y

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
D804	9A07342100	SUB PCB ASS'Y	KOP11204B
	9A07342600	PCB , SUB	KUP11204Z
D805.807	9A05195000	LED,RED SLR342VCF02	KVD342VCF02T085
D810-815	9A01390500	DIODE,1N4148MT	KVD1N4148MT
D816	9A05890300	LED,YELLOW SLR342YCF02	KVD342YCF02T085
F901	9A06765300	DIODE,MTZJ5.6BT	KVDMTZJ5.6BT
IC81	9A05328200	HOLDER,FUSE	KJCFC5S
IC82	9A06786000	IC, TMP87PM78F	BVITMP87PM78F
IC84	9A06757900	IC,PNA4612M00HB	BRVPNA4612M00HB
JK01	9A06904500	IC, 74HC138D	BVI74HC138D
JK02	9A05316900	JACK HTJ064-05BG	BJJ2E017Z
JK11	9A06677000	TERMINAL SP	KJJ5P011Z
OL11	9A07363700	JACK,BOARD	KJJ4N045Z
Q803.804	9A05895700	OUTLET,AC	BJJ7A003Z
Q805.806	9A03745200	TR,KSR2206TA	KVTKSR2206T
Q807.808	9A03747300	TR,KSB811-YTA	KVTKSB811YT
Q809	9A03811700	TR,KSD1021-YTA	KVTKSD1021YT
Q810	9A03745200	TR,KSR2206TA	KVTKSR2206T
Q811	9A05196900	TR,KSR1206TA	KVTKSR1206T
Q812.813	9A03747300	TR,KSB811-YTA	KVTKSB811YT
Q814	9A05196900	TR,KSC2316-Y-SHTA	KVTKSC2316YT
S101	9A04882400	SW,TACT	KST1A010Z
S824	9A06671200	SW,TACT EVQ21505R	BST1A014ZT
SW95	9A06784700	SW, PUSH (MOMS)	KSH1A001ZV
VR92.93	9A06673000	RES,VARIABLE	BVV2X02C104Y
VR94	9A06673100	RES,VARIABLE 03B104Y	BVV2X03B104Y
VR95	9A06224700	VR , ENCODOR EC16B1210	BSR2A006Z
VR96	9A06237000	VOLUME, MOTOR RK6312MC282	KVV9A08A503Z
X801	9A05193000	CRYSTAL, 08000E160C	KOX08000E160C
Z101	9A05337900	R,NETWORK SN8X103J	KRGSN8X103J